```
  * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 17:07:23 ON 02 AUG 2004

=> FIL STNGUIDE
COST IN U.S. DOLLARS                                  SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       0.21       0.21

FILE 'STNGUIDE' ENTERED AT 17:07:34 ON 02 AUG 2004
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY, JAPAN SCIENCE
AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Jul 30, 2004 (20040730/UP).

=> file agricola biosis embase caplus
COST IN U.S. DOLLARS                                  SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       1.32       1.53

FILE 'AGRICOLA' ENTERED AT 17:20:53 ON 02 AUG 2004

FILE 'BIOSIS' ENTERED AT 17:20:53 ON 02 AUG 2004
COPYRIGHT (C) 2004 BIOLOGICAL ABSTRACTS INC.(R)

FILE 'EMBASE' ENTERED AT 17:20:53 ON 02 AUG 2004
COPYRIGHT (C) 2004 Elsevier Inc. All rights reserved.

FILE 'CAPLUS' ENTERED AT 17:20:53 ON 02 AUG 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)

=> s phytosulfokine and plant
L1          130 PHYTOSULFOKINE AND PLANT

=> duplicate remove l1
DUPLICATE PREFERENCE IS 'AGRICOLA, BIOSIS, EMBASE, CAPLUS'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
PROCESSING COMPLETED FOR L1
L2           74 DUPLICATE REMOVE L1 (56 DUPLICATES REMOVED)

=> s l2 and arabidopsis
L3            8 L2 AND ARABIDOPSIS

=> d l3 1-8 ti

L3   ANSWER 1 OF 8  AGRICOLA  Compiled and distributed by the National
     Agricultural Library of the Department of Agriculture of the United States
     of America.  It contains copyrighted materials.  All rights reserved.
     (2004) on STN
TI   Diversity of   ***Arabidopsis***   genes encoding precursors for
       ***phytosulfokine***  , a peptide growth factor.
```

L3 ANSWER 2 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Ligand-receptor pairs in ***plant*** peptide signaling.

L3 ANSWER 3 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI ***Plant*** signalling peptides.

L3 ANSWER 4 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Peptide transport in ***plants*** .

L3 ANSWER 5 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Promotive effects of the peptidyl ***plant*** growth factor, ***phytosulfokine*** -alpha, on the growth and chlorophyll content of ***Arabidopsis*** seedlings under high night-time temperature conditions.

L3 ANSWER 6 OF 8 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
TI Leucine-Rich Repeat Receptor Kinases in ***Plants*** : Structure, Function, and Signal Transduction Pathways.

L3 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
TI Proteins containing a conserved motif associated with regulation of ***plant*** growth and genes encoding them and their use in ***plant*** breeding

L3 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
TI cDNA and protein sequences of ***Arabidopsis*** ***phytosulfokine*** and their uses in regulation of ***plant*** growth in transgenic ***plants***

=> d l3 8 ibib ab

L3 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:682845 CAPLUS
DOCUMENT NUMBER: 137:227716
TITLE: cDNA and protein sequences of ***Arabidopsis*** ***phytosulfokine*** and their uses in regulation of ***plant*** growth in transgenic ***plants***
INVENTOR(S): Sakagami, Yoji; Matsubayashi, Yoshikatsu; Yang, He Ping
PATENT ASSIGNEE(S): Nagoya University, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002253241	A2	20020910	JP 2001-52946	20010227
EP 1243654	A1	20020925	EP 2002-3238	20020220
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2003032777	A1	20030213	US 2002-78678	20020221

PRIORITY APPLN. INFO.: JP 2001-52946 A 20010227

AB The invention provides cDNA and protein sequences of two ***Arabidopsis*** ***phytosulfokine*** , AtPSK2 and AtPSKL. Over-expression of AtPSK2 and AtPSKL gene in transgenic ***Arabidopsis*** increased the level of ***phytosulfokine*** -.beta. which resulted in the stimulation of cell proliferation. The AtPSK2 and AtPSKL can be used for ***plant*** growth regulation in transgenic ***plants*** .

=> d l3 7 ibib ab

L3 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:814321 CAPLUS

DOCUMENT NUMBER: 137:335306

TITLE: Proteins containing a conserved motif associated with regulation of ***plant*** growth and genes encoding them and their use in ***plant*** breeding

INVENTOR(S): Sauter, Margret; Lorbiecke, Rene; Mironov, Vladimir; Frankard, Valerie; Dillen, Willy; Lejeune, Pierre; Broekaert, Willem

PATENT ASSIGNEE(S): Cropdesign N.V., Belg.

SOURCE: PCT Int. Appl., 156 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002083901	A2	20021024	WO 2002-EP4035	20020411
WO 2002083901	A3	20030821		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1377666	A2	20040107	EP 2002-732597	20020411
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				

PRIORITY APPLN. INFO.: US 2001-283313P P 20010412
WO 2002-EP4035 W 20020411

AB Rice proteins that contain a conserved sequence derived from the growth regulating protein ***phytosulfokine*** -.alpha. and that may may play a role in controlling or altering patterns of ***plant*** growth and development are described. These proteins (GREP or Growth Regulating Proteins) or the genes encoding them may be used to later ***plant*** growth. Protein sequences and DNA sequences encoding them are reported. Furthermore, vectors comprising said DNA sequences are described, wherein

FILE 'BIOSIS' ENTERED AT 17:25:36 ON 02 AUG 2004
COPYRIGHT (C) 2004 BIOLOGICAL ABSTRACTS INC.(R)

FILE 'EMBASE' ENTERED AT 17:25:36 ON 02 AUG 2004
COPYRIGHT (C) 2004 Elsevier Inc. All rights reserved.

FILE 'CAPLUS' ENTERED AT 17:25:36 ON 02 AUG 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)

=> FIL STNGUIDE

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	2.84	27.05

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-1.47

FILE 'STNGUIDE' ENTERED AT 17:26:11 ON 02 AUG 2004
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY, JAPAN SCIENCE
AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Jul 30, 2004 (20040730/UP).

=> d l3 1-6 ibib ab
YOU HAVE REQUESTED DATA FROM FILE 'AGRICOLA, BIOSIS, EMBASE, CAPLUS' - CONTINUE?
(Y)/N:y

L3 ANSWER 1 OF 8 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN

ACCESSION NUMBER: 2002:45996 AGRICOLA
DOCUMENT NUMBER: IND23278534
TITLE: Diversity of ***Arabidopsis*** genes encoding precursors for ***phytosulfokine*** , a peptide growth factor.
AUTHOR(S): Yang, H.; Matsubayashi, Y.; Nakamura, K.; Sakagami, Y.
AVAILABILITY: DNAL (450 P692)
SOURCE: Plant physiology, Nov 2001. Vol. 127, No. 3. p. 842-851
Publisher: Rockville, MD : American Society of Plant Physiologists, 1926-
CODEN: PLPHAY; ISSN: 0032-0889
NOTE: Includes references
PUB. COUNTRY: Maryland; United States
DOCUMENT TYPE: Article; Conference
FILE SEGMENT: U.S. Imprints not USDA, Experiment or Extension
LANGUAGE: English
AB ***Phytosulfokine*** -alpha (PSK-alpha), a unique ***plant*** peptide growth factor, was originally isolated from conditioned medium of

asparagus (Asparagus officinalis) mesophyll cell cultures. PSK-alpha has several biological activities including promoting ***plant*** cell proliferation. Four genes that encode precursors of PSK-alpha have been identified from ***Arabidopsis*** . Analysis of cDNAs for two of these, AtPSK2 and AtPSK3, shows that both of these genes consist of two exons and one intron. The predicted precursors have N-terminal signal peptides and only a single PSK-alpha sequence located close to their carboxyl termini. Both precursors contain dibasic processing sites flanking PSK, analogous to animal and yeast prohormones. Although the PSK domain including the sequence of PSK-alpha and three amino acids preceding it are perfectly conserved, the precursors bear very limited similarity among ***Arabidopsis*** and rice (Oryza sativa), suggesting a new level of diversity among polypeptides that are processed into the same signaling molecule in ***plants*** , a scenario not found in animals and yeast. Unnatural [serine-4]PSK-beta was found to be secreted by transgenic ***Arabidopsis*** cells expressing a mutant of either AtPSK2 or AtPSK3 cDNAs, suggesting that both AtPSK2 and AtPSK3 encode PSK-alpha precursors. AtPSK2 and AtPSK3 were expressed demonstrably not only in cultured cells but also in intact ***plants*** , suggesting that PSK-alpha may be essential for ***plant*** cell proliferation in vivo as well as in vitro. Overexpression of either precursor gene allowed the transgenic calli to grow twice as large as the controls. However, the transgenic cells expressing either antisense cDNA did not dramatically decrease mitogenic activity, suggesting that these two genes may act redundantly.

L3 ANSWER 2 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2003:523730 BIOSIS
DOCUMENT NUMBER: PREV200300511129
TITLE: Ligand-receptor pairs in ***plant*** peptide signaling.
AUTHOR(S): Matsubayashi, Yoshikatsu [Reprint Author]
CORPORATE SOURCE: Graduate School of Bio-Agricultural Sciences, Nagoya University, Chikusa, Nagoya, 464-8601, Japan
matsu@agr.nagoya-u.ac.jp
SOURCE: Journal of Cell Science, (October 1 2003) Vol. 116, No. 19, pp. 3863-3870. print.
ISSN: 0021-9533 (ISSN print).
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 5 Nov 2003
Last Updated on STN: 5 Nov 2003

AB Extensive studies on ***plant*** signaling molecules over the past decade indicate that ***plant*** cell-to-cell communication, as is the case with animal systems, makes use of small peptide signals and specific receptors. To date, four peptide-ligand-receptor pairs have been identified and shown to be involved in a variety of processes. Systemin and ***phytosulfokine*** (PSK), the first and second signaling peptides identified in ***plants*** , were isolated by biochemical purification based on their biological activities. Furthermore, their receptors have been biochemically purified from plasma membranes on the basis of specific ligand-receptor interactions. By contrast, the two other peptide signals, CLAVATA3 (CLV3) and the pollen S determinant SCR/SP11, were genetically identified during searches for specific ligands for receptors that had already been cloned. Systemin functions in the ***plant*** wound response, whereas PSK appears to cooperate with auxin and cytokinin to regulate cellular dedifferentiation and redifferentiation. CLV3 is important for meristem organization, binding to a heterodimeric receptor comprising the CLV1 and CLV2 proteins.

SCR/SP11 instead plays a role in serf-incompatibility, where it activates a signalling cascade that leads to rejection of pollen with the same S haplotype. These ligands all seem to bind to receptors that possess intrinsic kinase activity, and al least two of them are generated by proteolytic processing of larger precursor proteins.

L3 ANSWER 3 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2003:311361 BIOSIS
DOCUMENT NUMBER: PREV200300311361
TITLE: ***Plant*** signalling peptides.
AUTHOR(S): Wisniewska, Justyna [Reprint Author]; Trejgell, Alina [Reprint Author]; Tretyn, Andrzej [Reprint Author]
CORPORATE SOURCE: Department of Biotechnology, Nicolaus Copernicus University, Institute of General and Molecular Biology, Gagarina 9, 87-100, Torun, Poland
SOURCE: Acta Physiologiae Plantarum, (2003) Vol. 25, No. 1, pp. 105-122. print.
CODEN: APPLDE. ISSN: 0137-5881.
DOCUMENT TYPE: Article
General Review; (Literature Review)
LANGUAGE: English
ENTRY DATE: Entered STN: 2 Jul 2003
Last Updated on STN: 2 Jul 2003

AB Biochemical and genetic studies have identified peptides that play crucial roles in ***plant*** growth and development, including defence mechanisms in response to wounding by pests, the control of cell division and expansion, and pollen self-incompatibility. The first two signalling peptides to be described in ***plants*** were tomato systemin and ***phytosulfokine*** (PSK). There is also biochemical evidence that natriuretic peptide-like molecules, immunologically-related to those found in animals, may exist in ***plants*** . Another example of signalling peptide is ENOD40, a product of a gene, which became active early in the root nodulation process following Rhizobium infection of legumes. Other predicted bioactive peptides or oligopeptides have been identified by means of genetic, rather then biochemical methods. The ***Arabidopsis*** CLAVATA3 protein is required for the correct organization of the shoot apical meristem and the pollen S determinant S-locus cysteine-rich protein (SCR also called S-locus protein 11, SP11). The ***plant*** signalling peptides discovered so far are involved in various processes and play an important role in communication between cells or organs, respectively. This review will focus on these peptides and their role in intercellular signalling.

L3 ANSWER 4 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2002:364378 BIOSIS
DOCUMENT NUMBER: PREV200200364378
TITLE: Peptide transport in ***plants*** .
AUTHOR(S): Stacey, Gary [Reprint author]; Koh, Serry; Granger, Cheryl; Becker, Jeffrey M.
CORPORATE SOURCE: Dept of Plant Microbiology and Pathology, University of Missouri, Columbia, MO, 65211, USA
staceyg@missouri.edu
SOURCE: Trends in Plant Science, (June, 2002) Vol. 7, No. 6, pp. 257-263. print.
ISSN: 1360-1385.
DOCUMENT TYPE: Article
General Review; (Literature Review)

LANGUAGE: English
ENTRY DATE: Entered STN: 3 Jul 2002
Last Updated on STN: 3 Jul 2002

AB Recent completion of the ***Arabidopsis*** genome revealed that this organism has ten times more peptide transporters than any other sequenced organism (prokaryote or eukaryote). These transporters are found in three protein families: the ABC-type transporters; the di- and tripeptide transporters; and the newly described tetra- and pentapeptide oligopetide transporters. The abundance of these transporters suggests that they play diverse and important roles in ***plant*** growth and development. Possible substrates for these transporters include glutathione, gamma-glutamyl peptides, hormone-amino acid conjugates, ***phytosulfokine*** , peptide-like compounds and peptide phytotoxins. However, the exact role of peptide transport in ***plants*** is still undefined.

L3 ANSWER 5 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2000:129930 BIOSIS
DOCUMENT NUMBER: PREV200000129930
TITLE: Promotive effects of the peptidyl ***plant*** growth factor, ***phytosulfokine*** -alpha, on the growth and chlorophyll content of ***Arabidopsis*** seedlings under high night-time temperature conditions.
AUTHOR(S): Yamakawa, Seiyei; Matsubayashi, Yoshikatsu; Sakagami, Youji; Kamada, Hiroshi; Satoh, Shinobu [Reprint author]
CORPORATE SOURCE: Institute of Biological Sciences, University of Tsukuba, Tsukuba, Ibaraki, 305-8572, Japan
SOURCE: Bioscience Biotechnology and Biochemistry, (Dec., 1999) Vol. 63, No. 12, pp. 2240-2243. print.
ISSN: 0916-8451.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 12 Apr 2000
Last Updated on STN: 4 Jan 2002

AB In order to investigate the function of the peptidyl ***plant*** growth factor, ***phytosulfokine*** -alpha (PSK-alpha), in ***plants*** , we examined the effect of PSK-alpha on the growth and chlorophyll content of ***Arabidopsis*** seedlings under high night-time temperature conditions. Although exposure to high night-time temperatures markedly reduced the fresh weight and chlorophyll content of the seedlings, these parameters in the ***plants*** supplied with PSK-alpha remained at the same levels as those of non-treated controls. These effects were not apparent when (2-5)PSK, Tyr-SO3H and kinetin were similarly supplied. The results suggest that PSK-alpha not only promotes cell proliferation, but may aid ***plants*** in their tolerance of heat stress.

L3 ANSWER 6 OF 8 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2004177825 EMBASE
TITLE: Leucine-Rich Repeat Receptor Kinases in ***Plants*** : Structure, Function, and Signal Transduction Pathways.
AUTHOR: Torii K.U.
CORPORATE SOURCE: K.U. Torii, Department of Biology, University of Washington, Seattle, WA 98195, United States
SOURCE: International Review of Cytology, (2004) 234/- (1-46).
Refs: 117

ISSN: 0074-7696 CODEN: IRCYAJ
COUNTRY: United States
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Leucine-rich repeat receptor kinases (LRR-RKs) comprise the largest subfamily of transmembrane receptor-like kinases in ***plants*** , with over 200 members in ***Arabidopsis*** . LRR-RKs regulate a wide variety of developmental and defense-related processes including cell proliferation, stem cell maintenance, hormone perception, host-specific as well as non-host-specific defense response, wounding response, and symbiosis. Several studies indicate that LRR-RKs act as dimers, and some may form a receptor complex with leucine-rich repeat receptor-like proteins (LRR-RPs) that lack a cytoplasmic kinase domain. Despite the fact that structural features of LRR-RKs are fairy similar, five available ligand molecules for LRR-RKs are structurally diverse, from steroids (brassinolides) to peptides (***phytosulfokine*** and systemin) and secreted proteins (CLV3). Precise ligand-binding sites of LRR-RKs are not understood. However, the extracellular "island" domain that intercepts the LRR domain in some LRR-RKs may play an important role in ligand binding. Advances in unveiling components of three LRR-RK signaling pathways, namely BRI1 in steroid signaling, CLV1 in meristem maintenance, and FLS2 in bacterial elicitor perception, revealed an intriguing link between ***plant*** LRR-RK and animal receptor signaling pathways. Finally, rapid progress made in LRR-RK research beyond the model system ***Arabidopsis*** has provided exciting, novel insights into the evolution of the LRR-RK signaling system in ***plants*** , such as BRI1 utilized in the wound-responsive signaling pathway in Solanaceae ***plants*** and recruitment of CLV1 in nodule development in leguminous ***plants*** .

=> s l2 and transform?
L2 CANNOT BE SEARCHED IN STNGUIDE
The L-number cannot be used because it does not contain a query.
Enter DISPLAY HISTORY to see the sequence of commands that created this L-number.

=> s phytosulfokine and plant and transform?
0 PHYTOSULFOKINE
13 PLANT
8 PLANTS
21 PLANT
(PLANT OR PLANTS)
0 TRANSFORM?
L6 0 PHYTOSULFOKINE AND PLANT AND TRANSFORM?

=> file agricola biosis embase caplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.90	43.43

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-1.47

FILE 'AGRICOLA' ENTERED AT 17:38:03 ON 02 AUG 2004

FILE 'BIOSIS' ENTERED AT 17:38:03 ON 02 AUG 2004
COPYRIGHT (C) 2004 BIOLOGICAL ABSTRACTS INC.(R)

FILE 'EMBASE' ENTERED AT 17:38:03 ON 02 AUG 2004
COPYRIGHT (C) 2004 Elsevier Inc. All rights reserved.

FILE 'CAPLUS' ENTERED AT 17:38:03 ON 02 AUG 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)

=> s phytosulfokine and plant and transform?
L7 8 PHYTOSULFOKINE AND PLANT AND TRANSFORM?

=> d l7 1-8 ti

L7 ANSWER 1 OF 8 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
TI Diversity of Arabidopsis genes encoding precursors for ***phytosulfokine*** , a peptide growth factor.

L7 ANSWER 2 OF 8 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
TI Effects of ***phytosulfokine*** -alpha on growth and tropane alkaloid production in ***transformed*** roots of Atropa belladonna.

L7 ANSWER 3 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Effects of ***phytosulfokine*** -alpha on growth and tropane alkaloid production in ***transformed*** roots of Atropa belladonna.

L7 ANSWER 4 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Molecular cloning and characterization of OsPSK, a gene encoding a precursor for ***phytosulfokine*** -alpha, required for rice cell proliferation.

L7 ANSWER 5 OF 8 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI A rapid and efficient system of Agrobacterium infection-mediated transient gene expression in rice Oc cells and its application for analysis of the expression and antisense suppression of preprophytosulfokine, a precursor of ***phytosulfokine*** -alpha, encoded by OsPSK gene.

L7 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
TI Effects of ***phytosulfokine*** -.alpha. on growth and tropane alkaloid production in ***transformed*** roots of Atropa belladonna

L7 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
TI Molecular cloning and characterization of OsPSK, a gene encoding a precursor for ***phytosulfokine*** -.alpha., required for rice cell proliferation

L7 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
TI A rapid and efficient system of Agrobacterium infection-mediated transient gene expression in rice Oc cells and its application for analysis of the expression and antisense suppression of preprophytosulfokine, a precursor of ***phytosulfokine*** -.alpha., encoded by OsPSK gene

=> duplicae remove l7
DUPLICAE IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> duplicate remove l7
DUPLICATE PREFERENCE IS 'AGRICOLA, BIOSIS, CAPLUS'
KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n
PROCESSING COMPLETED FOR L7
L8 4 DUPLICATE REMOVE L7 (4 DUPLICATES REMOVED)

=> d l8 1-4 ibib ab

L8 ANSWER 1 OF 4 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 1
ACCESSION NUMBER: 2002:45652 AGRICOLA
DOCUMENT NUMBER: IND23278141
TITLE: Effects of ***phytosulfokine*** -alpha on growth and tropane alkaloid production in ***transformed*** roots of Atropa belladonna.
AUTHOR(S): Sasaki, K.; Ishise, T.; Shimomura, K.; Kobayashi, T.; Matsubayashi, Y.; Sakagami, Y.; Umetsu, H.; Kamada, H.
AVAILABILITY: DNAL (QK745.P56)
SOURCE: Plant growth regulation, Jan 2002. Vol. 36, No. 1. p. 87-90
Publisher: Dordrecht : Kluwer Academic Publishers.
CODEN: PGRED3; ISSN: 0167-6903
NOTE: Includes references
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Article
FILE SEGMENT: Non-U.S. Imprint other than FAO
LANGUAGE: English
AB ***Phytosulfokine*** (PSK)-alpha is a sulphated pentapeptide, isolated from the medium of cultured Asparagus officinalis mesophyll cells, that promotes cell proliferation. It is a putative key factor in conditioned medium required for the growth of low-density ***plant*** cell cultures. The present study investigates the effect of PSK-alpha on growth and tropane alkaloid production in Atropa belladonna hairy roots ***transformed*** with Agrobacterium rhizogenes (MAFF 03-01724). Although the growth rates of hairy roots cultured in medium with or without PSK-alpha for 4 weeks did not show any differences, the productivity of tropane alkaloids, especially of hyoscyamine, was enhanced by 10(-7) or 10(-8) M PSK-alpha. In addition, the content of tropane alkaloids in ***transformed*** roots treated with PSK-alpha was 1.4 times higher than that of untreated roots after 4 weeks of culture. The time course of growth and tropane alkaloid production in Atropa belladonna ***transformed*** roots suggested that PSK-alpha influenced the growth

of ***transformed*** roots during the active growing phase, but not tropane alkaloid production.

L8 ANSWER 2 OF 4 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN

ACCESSION NUMBER: 2002:45996 AGRICOLA
DOCUMENT NUMBER: IND23278534
TITLE: Diversity of Arabidopsis genes encoding precursors for ***phytosulfokine*** , a peptide growth factor.
AUTHOR(S): Yang, H.; Matsubayashi, Y.; Nakamura, K.; Sakagami, Y.
AVAILABILITY: DNAL (450 P692)
SOURCE: Plant physiology, Nov 2001. Vol. 127, No. 3. p. 842-851
Publisher: Rockville, MD : American Society of Plant Physiologists, 1926-
CODEN: PLPHAY; ISSN: 0032-0889
NOTE: Includes references
PUB. COUNTRY: Maryland; United States
DOCUMENT TYPE: Article; Conference
FILE SEGMENT: U.S. Imprints not USDA, Experiment or Extension
LANGUAGE: English

AB ***Phytosulfokine*** -alpha (PSK-alpha), a unique ***plant*** peptide growth factor, was originally isolated from conditioned medium of asparagus (Asparagus officinalis) mesophyll cell cultures. PSK-alpha has several biological activities including promoting ***plant*** cell proliferation. Four genes that encode precursors of PSK-alpha have been identified from Arabidopsis. Analysis of cDNAs for two of these, AtPSK2 and AtPSK3, shows that both of these genes consist of two exons and one intron. The predicted precursors have N-terminal signal peptides and only a single PSK-alpha sequence located close to their carboxyl termini. Both precursors contain dibasic processing sites flanking PSK, analogous to animal and yeast prohormones. Although the PSK domain including the sequence of PSK-alpha and three amino acids preceding it are perfectly conserved, the precursors bear very limited similarity among Arabidopsis and rice (Oryza sativa), suggesting a new level of diversity among polypeptides that are processed into the same signaling molecule in ***plants*** , a scenario not found in animals and yeast. Unnatural [serine-4]PSK-beta was found to be secreted by transgenic Arabidopsis cells expressing a mutant of either AtPSK2 or AtPSK3 cDNAs, suggesting that both AtPSK2 and AtPSK3 encode PSK-alpha precursors. AtPSK2 and AtPSK3 were expressed demonstrably not only in cultured cells but also in intact ***plants*** , suggesting that PSK-alpha may be essential for ***plant*** cell proliferation in vivo as well as in vitro. Overexpression of either precursor gene allowed the transgenic calli to grow twice as large as the controls. However, the transgenic cells expressing either antisense cDNA did not dramatically decrease mitogenic activity, suggesting that these two genes may act redundantly.

L8 ANSWER 3 OF 4 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN DUPLICATE 2

ACCESSION NUMBER: 2000:324412 BIOSIS
DOCUMENT NUMBER: PREV200000324412
TITLE: A rapid and efficient system of Agrobacterium infection-mediated transient gene expression in rice Oc cells and its application for analysis of the expression

and antisense suppression of preprophytosulfokine, a precursor of ***phytosulfokine*** -alpha, encoded by OsPSK gene.

AUTHOR(S): Yang, Heping [Reprint author]; Morita, Akiko; Matsubayashi, Yoshikatsu; Nakamura, Kenzo; Sakagami, Youji

CORPORATE SOURCE: Laboratory of Bioactive Natural Product Chemistry, Graduate School of Bio-Agricultural Sciences, Nagoya University, Chikusa, Nagoya, 464-8601, Japan

SOURCE: Plant and Cell Physiology, (June, 2000) Vol. 41, No. 6, pp. 811-816. print.
CODEN: PCPHA5. ISSN: 0032-0781.

DOCUMENT TYPE: Article

LANGUAGE: English

ENTRY DATE: Entered STN: 2 Aug 2000
Last Updated on STN: 7 Jan 2002

AB A rapid and efficient system for Agrobacterium infection-mediated transient gene expression in rice has been developed. Using this system, transient expression of preprophytosulfokine, a precursor of ***phytosulfokine*** -alpha, encoded by OsPSK gene was analyzed. The results suggest that the Agrobacterium infection-mediated transient gene expression system is as efficient in rice Oc cells as in tobacco BY-2 cells and might be useful for rapid analysis not only of foreign gene expression, but also of antisense gene suppression.

L8 ANSWER 4 OF 4 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 3

ACCESSION NUMBER: 2001:102839 BIOSIS

DOCUMENT NUMBER: PREV200100102839

TITLE: Molecular cloning and characterization of OsPSK, a gene encoding a precursor for ***phytosulfokine*** -alpha, required for rice cell proliferation.

AUTHOR(S): Yang, Heping [Reprint author]; Matsubayashi, Yoshikatsu; Hanai, Hidetoshi; Nakamura, Kenzo; Sakagami, Youji

CORPORATE SOURCE: Laboratory of Bioactive Natural Product Chemistry, Graduate School of Bio-Agricultural Sciences, Nagoya University, Chikusa, Nagoya, 464-8601, Japan
hyang@nagoya-u.ac.jp

SOURCE: Plant Molecular Biology, (November, 2000) Vol. 44, No. 5, pp. 635-647. print.
CODEN: PMBIDB. ISSN: 0167-4412.

DOCUMENT TYPE: Article

LANGUAGE: English

ENTRY DATE: Entered STN: 28 Feb 2001
Last Updated on STN: 15 Feb 2002

AB We previously characterized an OsPSK cDNA encoding a precursor of ***phytosulfokine*** -alpha (PSK-alpha), a peptide ***plant*** growth factor. Southern blot analysis suggested that OsPSK is a single-copy gene in rice, which we have isolated and characterized. The OsPSK gene consists of one large intron and two exons. The 5-amino acid PSK-alpha sequence located close to the COOH-terminus of the precursor is encoded in the second exon. A putative TATA box was found at position-68 with respect to the transcription initiation site. Upstream of this sequence, several potential regulatory elements, including one CAAT-box, three CCAAT-boxes, one enhancer core-like sequence, and three E-boxes could be identified. By constructing plasmids with various lengths of the 5'-upstream regions of the OsPSK gene fused to the coding sequence for

bacterial beta-glucuronidase (GUS), we demonstrated a region 1.9 kb upstream of the transcription initiation point, which contains most of the putative 5'-regulatory elements, to be sufficient for maximal-level GUS expression in ***transformed*** rice Oc cells. The promoter of the OsPSK gene gave significantly higher levels of GUS expression than the CaMV 35S promoter. These results suggest that the OsPSK promoter could be useful for the constitutive expression of a foreign gene at high levels in ***transformed*** rice culture cells. Northern blot analyses suggest that the expression of OsPSK is reinforced by auxin and cytokinin.

=>
Connection closed by remote host

---Logging off of STN---

END

Unable to generate the STN prompt.
Exiting the script...